

**REMARKS**

Pursuant to the present amendment, claims 1, 22 and 41 have been amended, claims 2, 8, 17-19, 27, 36-38, 46 and 56-93 have been canceled. Thus, claims 1, 3-7, 9-16, 20-26, 28-35, 39-45 and 47-55 are pending in the present application. No new matter has been introduced by way of the present amendment. Reconsideration of the present application is respectfully requested in view of the amendments and arguments set forth herein.

Pursuant to the present amendment, claims 56-93 have been canceled as they are directed to a non-elected invention that was the subject of a previous restriction requirement. Applicants specifically reserve the right to pursue the subject matter defined by the canceled claims in a later filed application should they so desire.

In the Office Action, claims 1, 2, 4, 6 and 20-21 were rejected under 35 U.S.C. § 102 as allegedly being anticipated by Harame (U.S. Patent No. 4,997,776). Claims 1, 3-4, 6, 20-21, 22-24, 26 and 39-40 were rejected under 35 U.S.C. § 102 as allegedly being anticipated by Zdebel (U.S. Patent No. 5,070,031). Claims 8, 27, 41-43 and 45-47 were rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Zdebel taken with Turner (U.S. Patent No. 5,177,025). Claims 9-19, 28-38 and 48-55 were rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Zdebel taken with Turner and Joyce (U.S. Patent No. 5,326,710). Claims 17-19 and 36-38 were rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Zdebel taken with Turner and further in view of Pogge (U.S. Patent No. 4,307,180) and Chittipeddi (U.S. Patent No. 5,763,314). Applicants respectfully traverse the Examiner's rejections.

As the Examiner well knows, an anticipating reference by definition must disclose every limitation of the rejected claim in the same relationship to one another as set forth in the claim. *In re Bond*, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). To the extent the Examiner relies on

principles of inherency in making the anticipation rejections in the Office Action, inherency requires that the asserted proposition necessarily flow from the disclosure. *In re Oelrich*, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981); *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1463-64 (Bd. Pat. App. & Int. 1990); *Ex parte Skinner*, 2 U.S.P.Q.2d 1788, 1789 (Bd. Pat. App. & Int. 1987); *In re King*, 231 U.S.P.Q. 136, 138 (Fed. Cir. 1986). It is not enough that a reference could have, should have, or would have been used as the claimed invention. “The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *Oelrich*, at 326, quoting *Hansgirg v. Kemmer*, 40 U.S.P.Q. 665, 667 (C.C.P.A. 1939); *In re Rijckaert*, 28 U.S.P.Q.2d 1955, 1957 (Fed. Cir. 1993), quoting *Oelrich*, at 326; see also *Skinner*, at 1789. “Inherency … may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *Skinner*, at 1789, citing *Oelrich*. Where anticipation is found through inherency, the Office’s burden of establishing *prima facie* anticipation includes the burden of providing “…some evidence or scientific reasoning to establish the reasonableness of the examiner’s belief that the functional limitation is an inherent characteristic of the prior art.” *Skinner* at 1789.

Moreover, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142.

Moreover, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); M.P.E.P. § 2143.03.

With respect to alleged obviousness, there must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. The consistent criterion for determining obviousness is whether the prior art would have suggested to one of ordinary skill in the art that the process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art. Both the suggestion and the expectation of success must be founded in the prior art, not in the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988); M.P.E.P. § 2142.

Pursuant to the present amendment, independent claims 1 and 22 have been amended to include, among other things, that the first, second and third layers of epitaxial silicon are formed by performing an *in situ* epitaxial growth process in a single epitaxial reactor. Independent claim 41 has been further amended to include specific steps related to the formation of the trench isolation region. Each of the independent claims have been amended to recite precise thickness

limitations for the first, second and third layers of epitaxial silicon. As thus amended, it is respectfully submitted that all pending claims are in condition for immediate allowance.

In view of the amendments set forth herein, it is believed that the Examiner's anticipation rejections are now moot. More specifically, it is believed that the fundamental issue to be addressed with respect to the pending claims is the obviousness rejection (of claims 8, 27, 41-43 and 45-47) based upon Zdebel, Turner, Pogge and Chittipeddi. Applicants respectfully submit that all pending claims are allowable over the prior art.

Fundamentally, it is believed that, in making the present rejections based upon obviousness, the Examiner has, respectfully, engaged in an improper use of hindsight using Applicants' disclosure as a roadmap. A recent Federal Circuit case makes it crystal clear that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 143 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35.

As will be readily understood by those skilled in the art, the specification is directed to devices in high voltage applications. For example, the specification clearly recites one example of where the device is intended to have an operating voltage of approximately 100 volts. To that end, the first, second and third epitaxial layers disclosed therein are very thick (in a relative sense) to other comparable devices. As noted by the Examiner, Zdebel is silent with respect to the thickness of the layers identified therein. In Harame, the thickness of the "first layer" 12 is stated to be 500-1000 nm (Col. 4, l. 14) and the thicknesses of the "second layer" 16 and "third layer" 18 are stated to be 50-100 nm (Col. 4, l. 38). The layer thicknesses identified in Harame

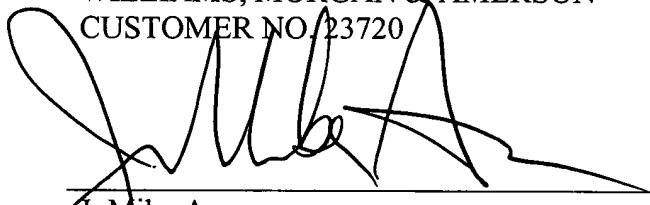
are much less than the recited thickness of the first, second and third layers of epitaxial silicon recited in the pending claims.

As the Examiner well knows, it is the entirety of the invention that must be considered for purposes of determining patentability. It is respectfully submitted that the art of record does not show forming the relatively thick layers of epitaxial silicon in the manner set forth in the claims. Moreover, there is no suggestion in the prior art to form a multiplicity of such relatively thick layers in an *in situ* process, as now set forth in all of the pending claims. There is simply no suggestion or motivation in the art of record to form the relatively thick layers of epitaxial silicon in the manner set forth in the pending claims.

For at least the aforementioned reasons, it is respectfully submitted that all pending claims are in condition for immediate allowance. The Examiner is invited to contact the undersigned attorney at (713) 934-4055 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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